Pumps & Systems

SOBG

Series high temperature asphalt pump



Source Pumps & Systems Co., LTD.

Pumps & Systems

Add: No.18 Xidian, Qian mu cheng yi, Ying cheng zi Street,Ganjingzi District, Dalian, China 116036

TEL: +86-411-66853898
FAX: +86-411-86715305

●Structure and Properties

SOBG Series high temperature asphalt pump is horizontal, single-stage, center support, single suction cantilever type centrifugal pump, the pump body or end cover is equipped with thermal insulation coating, which used steam and conduction oil to heat the conveying liquids and keep heat preservation. This series of pumps make the careful consideration and design in the structures of support, heat preservation, bearing housing and shaft seal cooling. And it can be equipped with all sorts of auxiliary and monitoring system, which makes this series of pump products of high safety and reliability.

SOBG Series high temperature asphalt pump suitable for conveying the chemically neutral, or corrosive, clean (or contain a small amount of particles) heavy oil, asphalt and other media under 450 ℃.

SOBG series high-temperature asphalt pump has excellent hydraulic performance, holds the advantage of high efficiency and low noise, which is a new generation of high efficiency and energy saving products.

● Application Range

Asphalt pump is widely used in petroleum, chemical fiber, metallurgy, machinery, electricity, machine tools, shipbuilding, glass, roads and all walks of life.

Asphalt pump is applicable for conveying asphalt, fuel oil, lubricating oil, hydraulic oil, crude oil, and other similar high temperature liquid.

● Performance Range

Temperature: ~+450℃

Pressure: ~135bar

Flow: ~2600 m3/h

Head of delivery: ~300m



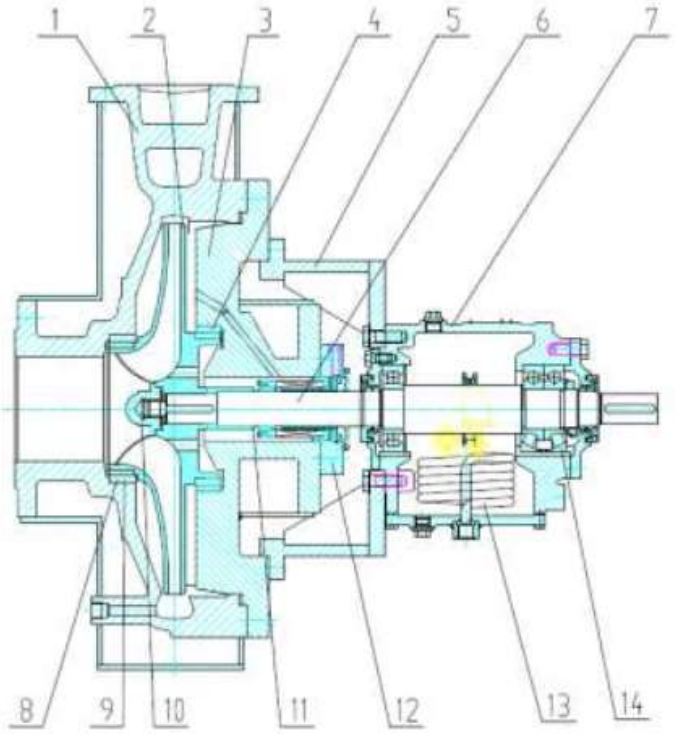


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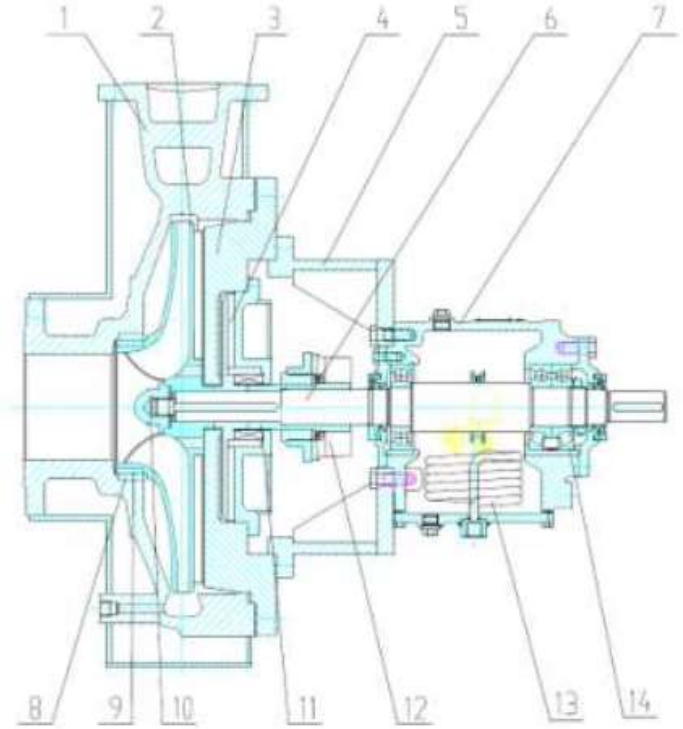
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SOBG Section drawing (Proposal I)



1	Pump casing
2	Impeller
3	Pump cover
4	Casing wear ring
5	Connector
6	Shaft
7	Bearing house
8	Casing wear ring
9	Impeller
10	Impeller nut
11	Shaft sleeve
12	Mechanical seal
13	Cooling pipe
14	Bearing

SOBG Section drawing (Proposal II)



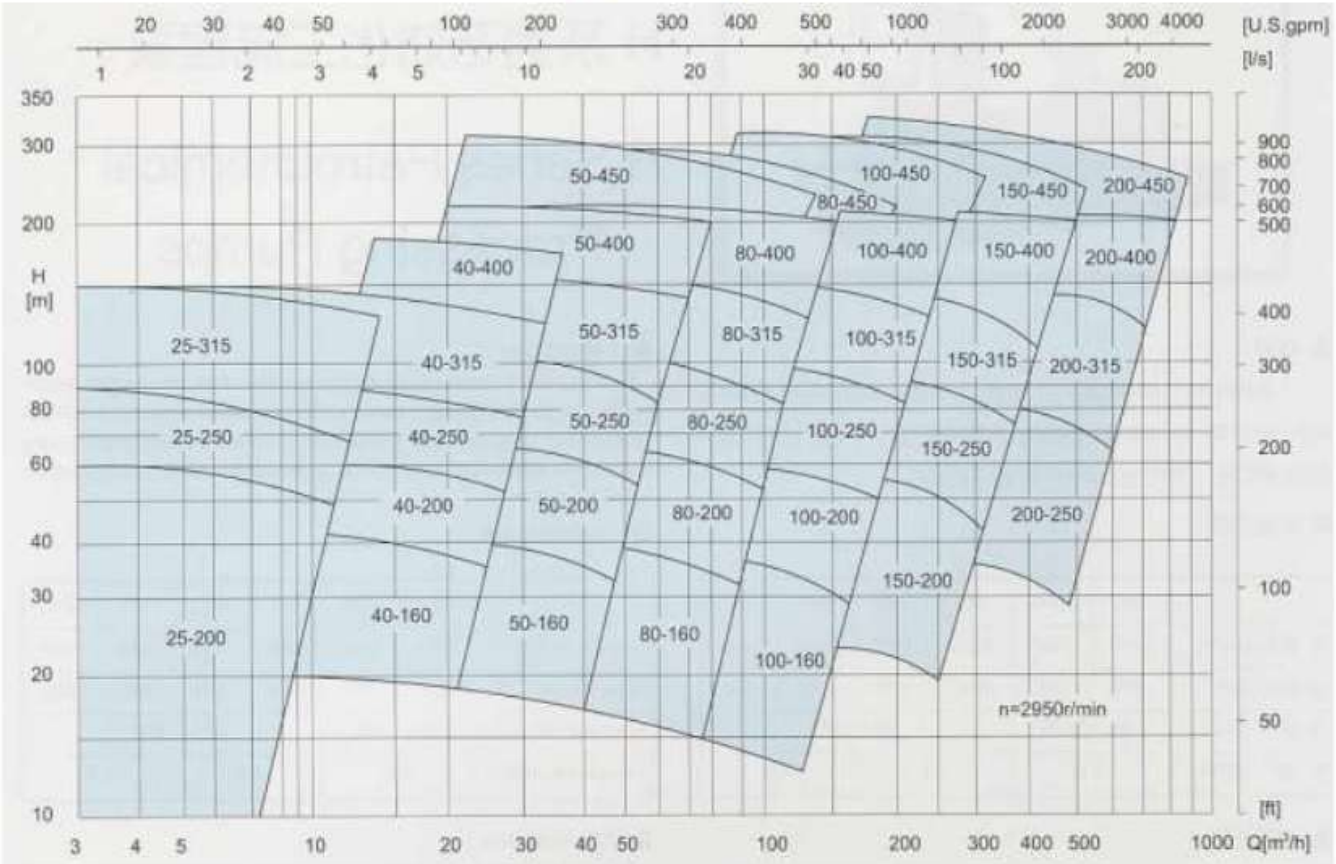
1	Pump casing
2	Impeller
3	Pump cover
4	Auxiliary impeller
5	connector
6	Shaft
7	Bearing
8	Casing wear ring
9	Impeller wear ring
10	Impeller nut
11	Shaft sleeve
12	Dynamic seal
13	Cooling pipe
14	Bearing

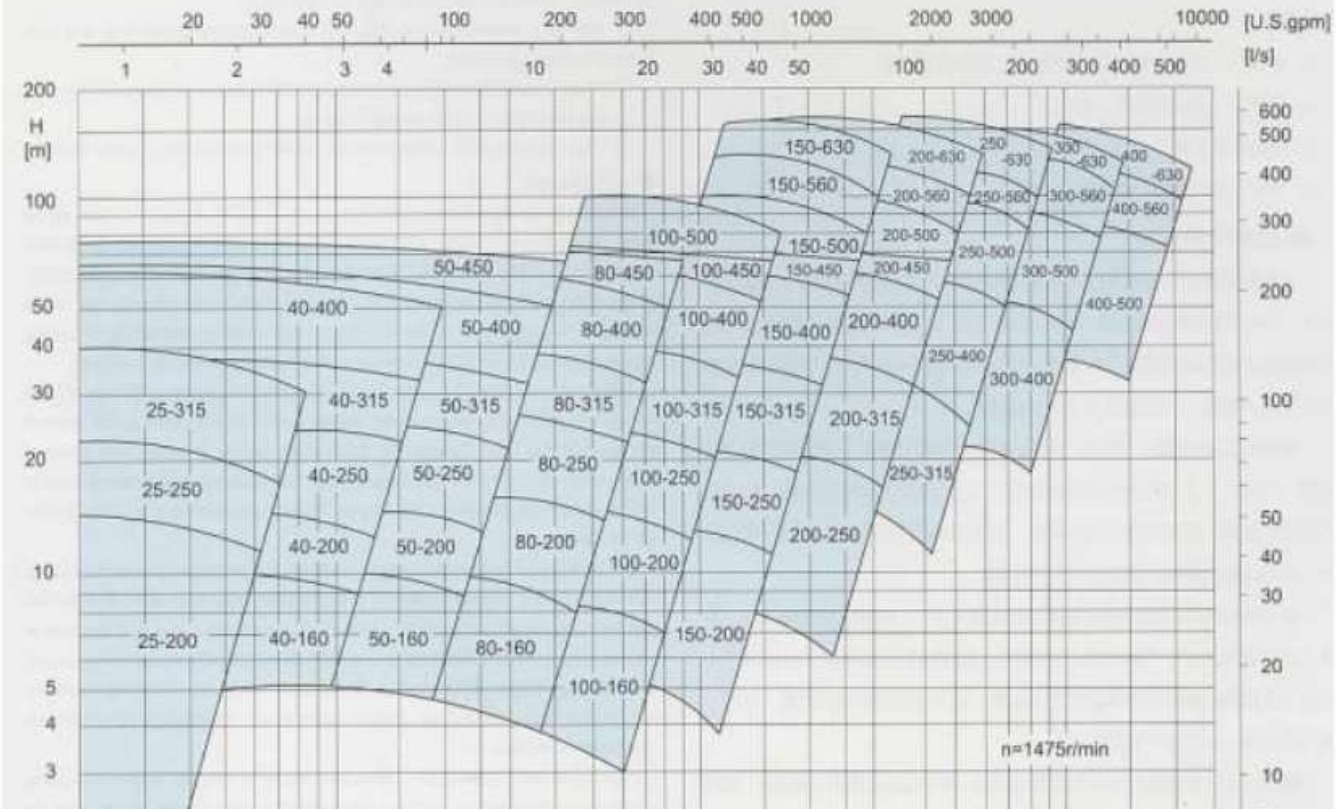
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SOBG Range of performance





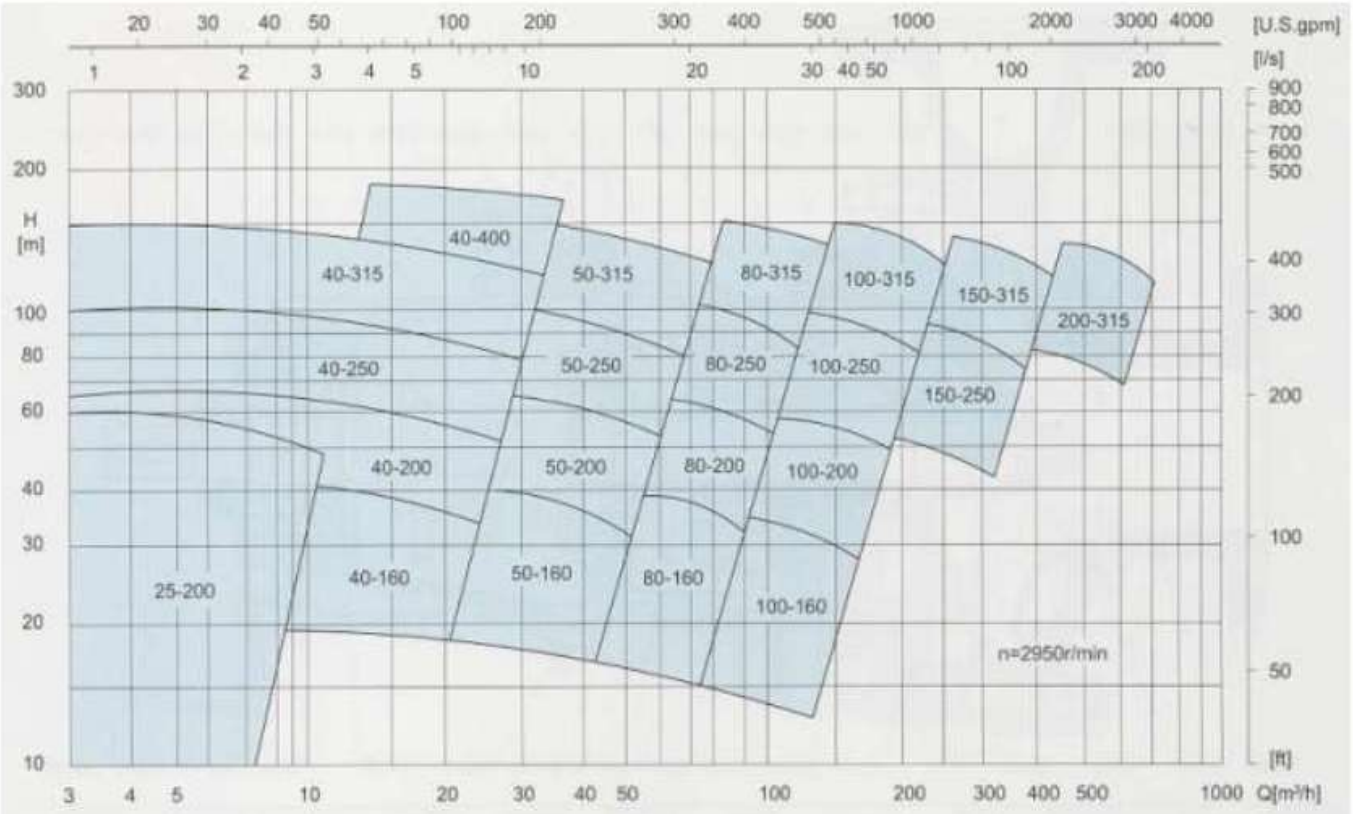

2
2 3 4 5 10 20 30 40 50 100 200 300 400 500 1000 2000 Q[m³/h]
[ft]

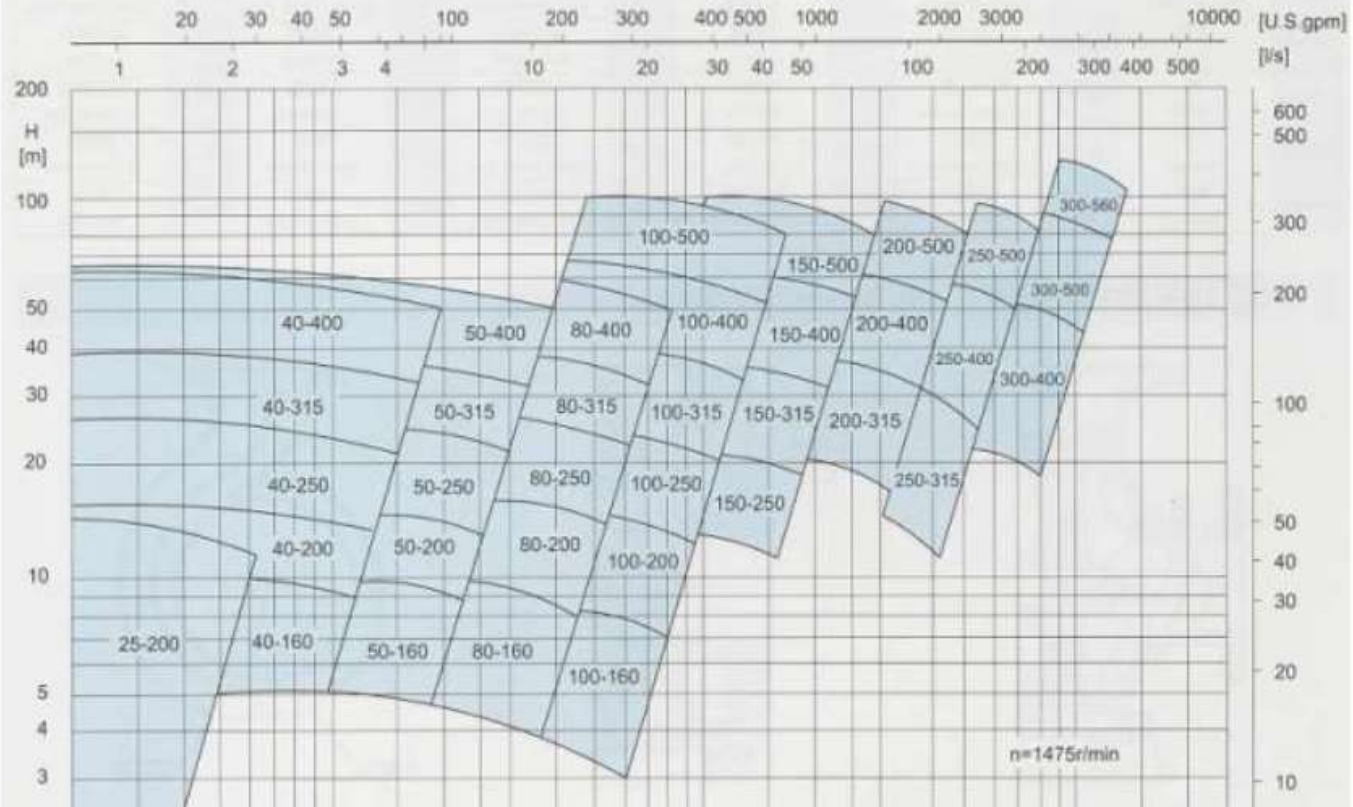
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SOBG Range of performance






2
[ft]
2
3
4
5
10
20
30
40
50
100
200
300
400
500
1000
2000
Q[m³/h]

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SOBG Table of standard performance

Type	SY.	Q m³/h	H m	Speed 2950r/min						Q m³/h	H m	Speed 1475r/min					
				Proportion1.0		Proportion1.35		Proportion1.84				Proportion1.0		Proportion1.35		Proportion1.84	
				电机功率(kW)及型号 Power and Type								Power and Type					
25-200	A	11	52	5.5	Y132S1-2	7.5	Y132S2-2	11	Y160M1-2	5.6	12.5					1.5	Y90L-4
	B	10	45	4	Y112M-2	5.5	Y132S1-2	7.5	Y132S2-2	5	11						
	C	8.5	38	3	Y100L-2	4	Y112M-2	5.5	Y132S1-2	4.5	9.5	1.1	Y90S-4	1.1	Y90S-4	1.1	Y90S-4
	D	7	30	2.2	Y90L-2	3	Y100L-2	4	Y112M-2	4	7						
	E	5.5	18	1.5	Y90S-2	1.5	Y90S-2	2.2	Y90L-2	3	4						
25-250	A	16	82	15	Y160M2-2	22	Y180M-2	30	Y200L1-2	8	22	2.2	Y100L-4	3	Y100L2-4	4	Y112M-4
	B	15	75							7.5	18						
	C	13	53	11	Y160M1-2	15	Y160M2-2	22	Y180M-2	6.5	14.5	1.5	Y90L-4	2.2	Y100L1-4	3	Y100L2-4
	D	11	40			11	Y160M1-2	15	Y160M2-2	5.5	10.5	1.1	Y90S-4	1.5	Y90L-4	2.2	Y100L1-4
25-315	A	19	128	30	Y200L1-2	37	Y200L2-2	55	Y250M-2	9.5	9.32	5.5	Y132S-4	7.5	Y132M-4	11	Y160M-4
	B	17.5	117	30	Y200L1-2	37	Y200L2-2	45	Y225M-2	8.8	29	4	Y112M-4	5.5	Y132S-4	7.5	Y132M-4
	C	15	105	22	Y180M-2	30	Y200L1-2	37	Y200L2-2	8	24	3	Y100L2-4	4	Y112M-4	5.5	Y132S-4
	D	14	90	18.5	Y160L-2	30	Y200L1-2	37	Y200L2-2	7	22	3	Y100L2-4	4	Y112M-4	5.5	Y132S-4
	E	13	80	15	Y160M2-2	22	Y180M-2	30	Y200L1-2	6.5	20	3	Y100L2-4	4	Y112M-4	5.5	Y132S-4
	F	12	65	15	Y160M2-2	18.5	Y160L-2	22	Y180M-2	5.8	16	2.2	Y100L1-4	3	Y100L2-4	4	Y112M-4
40-160	A	27	32	5.5	Y132S1-2	7.5	Y132S2-2	11	Y160M1-2	13.5	8	1.1	Y90S-4	1.1	Y90S-4	1.5	Y90L-4
	B	25	28							12.5	7						
	C	22	21	4	Y112M-2	5.5	Y132S1-2	5.5	Y132S1-2	11	5					1.1	Y90S-4
	D	19	16	2.2	Y90L-2	3	Y100L-2	4	Y112M-2	10	3.5						
40-200	A	34	51	11	Y160M1-2	15	Y160M2-2	18.5	Y160L-2	17	12.5	1.5	Y90L-4	2.2	Y100L1-4	3	Y100L2-4
	B	31	46	7.5	Y132S2-2	11	Y160M1-2	15	Y160M2-2	16	11	1.1	Y90S-4	1.5	Y90L-4	2.2	Y100L1-4
	C	26	36	5.5	Y132S1-2	7.5	Y132S2-2	11	Y160M1-2	14	8.5	1.1	Y90S-4	1.1	Y90S-4	1.5	Y90L-4
	D	23	27	4	Y112M-2	5.5	Y132S1-2	7.5	Y132S2-2	12	6	1.1	Y90S-4	1.1	Y90S-4	1.1	Y90S-4
40-250	A	35	75	18.5	Y160L-2	22	Y180M-2	30	Y200L1-2	17.5	19	3	Y100L2-4	4	Y112M-4	5.5	Y132S-4
	B	33	70	15	Y160M2-2	18.5	Y160L-2	30	Y200L1-2	16.5	18	2.2	Y100L1-4	3	Y100L2-4	4	Y112M-4
	C	29	54	11	Y160M1-2	15	Y160M2-2	18.5	Y160L-2	15	13	1.5	Y90L-4	2.2	Y100L1-4	3	Y100L2-4
	D	24	38	7.5	Y132S2-2	11	Y160M1-2	15	Y160M2-2	12.5	9	1.1	Y90S-4	1.5	Y90L-4	2.2	Y100L1-4
40-315	A	42	120	37	Y200L2-2	45	Y225M-2	75	Y280S-2	20	30	5.5	Y132S-4	7.5	Y132M-4	11	Y160M-4
	B	40	108	30	Y200L1-2	45	Y225M-2	55	Y250M-2	18	27	5.5	Y132S-4	7.5	Y132M-4	11	Y160M-4
	C	32	85	22	Y180M-2	30	Y200L1-2	45	Y225M-2	15	22	4	Y112M-4	5.5	Y132S-4	7.5	Y132M-4
	D	29	60	15	Y160M2-2	22	Y180M-2	30	Y200L1-2	13	18	3	Y100L2-4	3	Y100L2-4	5.5	Y132S-4
40-400	A	42	200	90	Y280M-2	132	Y315M1-2	160	Y315M2-2	20	50	15	Y160L-4	22	Y180L-4	30	Y200L-4
	B	36	190	75	Y280S-2	110	Y315S-2	160	Y315M2-2	17	45	11	Y160M-4	15	Y160L-4	22	Y100L1-4
	C	32	155	55	Y250M-2	75	Y280S-2	110	Y315S-2	15	35	7.5	Y132M-4	11	Y160M-4	15	Y160L-4
	D	28	120	45	Y225M-2	75	Y280S-2	90	Y280M-2	13	25	5.5	Y132S-4	7.5	Y132M-4	11	Y160M-4
50-160	A	50	33	11	Y160M1-2	15	Y160M2-2	15	Y160M2-2	25	8	1.5	Y90L-4	2.2	Y100L1-4	2.2	Y100L1-4
	B	44	29	7.5	Y132S2-2	11	Y160M1-2			22	7			1.5	Y90L-4		
	C	38	21	5.5	Y132S1-2	7.5	Y132S2-2	11	Y160M1-2	19	5	1.1	Y90S-4	1.1	Y90S-4	1.5	Y90L-4
	D	30	17	3	Y100L-2	4	Y112M-2	5.5	Y132S1-2	16	4					1.1	Y90S-4
50-200	A	60	52	18.5	Y160L-2	22	Y180M-2	30	Y200L1-2	30	12.5	3	Y100L2-4	3	Y100L2-4	4	Y112M-4
	B	55	46	15	Y160M2-2	18.5	Y160L-2	22	Y180M-2	28	11	2.2	Y100L1-4				
	C	50	36	11	Y160M1-2	15	Y160M2-2	18.5	Y160L-2	25	9	1.5	Y90L-4	2.2	Y100L1-4	3	Y100L2-4
	D	40	28	7.5	Y132S2-2	11	Y160M1-2	15	Y160M2-2	21	7	1.1	Y90S-4	1.5	Y90L-4	2.2	Y100L1-4
50-250	A	70	80	30	Y200L1-2	37	Y200L2-2	55	Y250M-2	35	20	4	Y112M-4	5.5	Y132S-4	7.5	Y132M-4
	B	65	72					45	Y225M-2	33	18						
	C	60	60	22	Y180M-2	30	Y200L1-2	37	Y200L2-2	30	15	3	Y100L2-4	4	Y112M-4	5.5	Y132S-4
	D	50	42	15	Y160M2-2	18.5	Y160L-2	22	Y180M-2	28	10	2.2	Y100L1-4	3	Y100L2-4	3	Y100L2-4
50-315	A	85	115	55	Y250M-2	75	Y280S-2	110	Y315S-2	43	28	11	Y160M-4	11	Y160M-4	15	Y160L-4
	B	80	100	45	Y225M-2			90	Y280M-2	40	24	7.5	Y132M-4				
	C	68	78	30	Y200L1-2	45	Y225M-2	55	Y250M-2	35	18	5.5	Y132S-4	7.5	Y132M-4	11	Y160M-4
	D	55	58	22	Y180M-2	30	Y200L1-2	37	Y200L-2	30	13	3	Y100L2-4	4	Y112M-4	5.5	Y132S-4
50-400	A	90	185	110	Y315S-2	160	Y315M2-2			46	50	18.5	Y180M-4	22	Y180L-4	30	Y200L-4
	B	85	165	90	Y280M-2	132	Y315M1-2	160	Y315M2-2	44	46	15	Y160L-4	18.5	Y180M-4	30	Y200L-4
	C	75	150	75	Y280S-2	110	Y315S-2	132	Y315M1-2	40	36	11	Y160M-4	15	Y160L-4	18.5	Y180M-4
	D	70	130	75	Y280S-2	90	Y280M-2	132	Y315M1-2	34	27	7.5	Y132M-4	11	Y160M-4	15	Y160L-4
	E	65	110	55	Y250M-2	75	Y280S-2	110	Y315S-2								
	A	135	250	220		185		400		67	63	30	Y200L-4	45	Y225M-4	55	Y250M-4

50-450	B	125	220	165		250		315		65	55	30	Y200L-4	37	Y225M-4	45	Y225M-4
	C	115	188	132	Y315M-2	185		250		57	46	18.5	Y180M-4	30	Y200L-4	37	Y225S-4
	D	95	130	90	Y180M-2	110	Y315S-2	160	Y315L1-2	48	32	11	Y160M-4	18.5	Y180M-4	22	Y180L-4

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Type	SY.	Q m³/h	H m	Speed 2950r/min						Q m³/h	H m	Speed 1475r/min					
				Proportion1.0		Proportion1.35		Proportion1.84				Proportion1.0		Proportion1.35		Proportion1.84	
				Power and Type								Power and Type					
80-160	A	100	30	15	Y160M2-2	18.5	Y160L-2	30	Y200L1-2	50	8	2.2	Y100L2-4	3	Y100L2-4	4	Y112M-4
	B	90	27	11	Y160M1-2	15	Y160M2-2	18.5	Y160L-2	45	6.5			2.2	Y100L1-4	3	Y100L2-4
	C	80	22			11	Y160M1-2	15	Y160M2-2	40	5.5	1.5	Y90L-4	1.1	Y90S-4	2.2	Y100L1-4
	D	70	18	5.5	Y132S1-2	7.5	Y132S2-2	11	Y160M1-2	30	4.5	1.1	Y90S-4			1.5	Y90L1-4
80-200	A	100	54	30	Y200L1-2	37	Y200L2-2	55	Y250M1-2	50	13	4	Y112M-4	5.5	Y132S-4	7.5	Y132M-4
	B	90	48	22	Y180M-2	30	Y200L1-2	37	Y200L2-2	46	12.5	3	Y100L2-4	4	Y112M-4	5.5	Y132S-4
	C	80	38	15	Y160M2-2	22	Y180M-2	30	Y200L1-2	40	9.5	2.2	Y100L1-4	3	Y100L2-4	4	Y112M-4
	D	70	29	11	Y160M1-2	15	Y160M2-2	22	Y180M2-2	36	7	1.5	Y90L2-4	2.2	Y100L1-4	3	Y100L2-4
80-250	A	120	80	45	Y225M-2	75	Y280S-2	90	Y280M-2	60	20	7.5	Y132M-4	11	Y160M-4	15	Y160L-4
	B	115	72			55	Y250M-2	75	Y280S-2	57	18			7.5	Y132M-4	11	Y160M-4
	C	105	55	30	Y200L1-2	45	Y225M-2	55	Y250M-2	50	14	4	Y112M-4	5.5	Y132S-4	7.5	Y132M-4
	D	85	42	22	Y180M-2	30	Y200L1-2	37	Y200L2-2	42	10	3	Y100L2-4	4	Y112M-4	5.5	Y132S-4
80-315	A	130	120	90	Y280M-2	110	Y315S-2	185		65	30	15	Y160L-4	18.5	Y180M-4	22	Y180L-4
	B	125	112	75	Y280S-4	90	Y280M-2			62	28	11	Y160M-4	15	Y160L-4		
	C	110	88	55	Y250M-2	75	Y280S-2			55	22			11	Y160M-4	15	Y160L-4
	D	85	65	37	Y200L2-2	45	Y225M-2	75	Y280S-2	42	16	5.5	Y132S-4	7.5	Y132M-4	11	Y160M-4
80-400	A	160	168	160	Y315M2-2	160	Y315M2-2	315		85	46	22	Y180L-4	30	Y200L-4	45	Y225M-4
	B	150	145	132	Y315M1-2	160	Y315M2-2	220		80	41	18.5	Y180M-4			37	Y225S-4
	C	135	125	110	Y315S-2	132	Y315M1-2	185		65	33	15	Y160L-4	18.5	Y180M-4	30	Y200L-4
	D	125	105	90	Y280M-2	110	Y315S-2	160	Y315M2-2	52	24	11	Y160M-4	15	Y160L-4	18.5	Y180M-4
	E	120	90	75	Y280S-2	110	Y315S-2	132	Y315M1-2								
80-450	A	200	229	350		450		630		103	60	37	Y225S-4	55	Y250M-4	75	Y280S-4
	B	188	205	220		280		400		98	57	37	Y225S-4	45	Y225M-4	75	Y280S-4
	C	178	188	185		250		355		83	47	30	Y200L-4	30	Y200L-4	45	Y225M-4
	D	160	158	160	Y315M2-2	200		250		70	32	15	Y160L-4	22	Y180L-4	30	Y200L-4
	E	142	128	110	Y315S-4	132	Y315M-4	180									
100-160	A	160	28	22	Y180M-2	30	Y200L1-2	37	Y200L2-2	80	7	3	Y100L2-4	4	Y112M-4	5.5	Y132S-4
	B	150	24	15	Y160M2-2	22	Y180M-2	30	Y200L1-2	72	5.5	2.2	Y100L1-2	3	Y100L2-4	4	Y112M-4
	C	130	17	11	Y160M1-2	15	Y160M2-2	18.5	Y160L-2	60	4	1.5	Y90L-4	2.2	Y100L1-4	3	Y100L2-4
	D	100	13	7.5	Y132S2-2	11	Y160M1-2	15	Y160M2-2	50	3.5	1.1	Y90S-4	1.5	Y90L-4	2.2	Y100L1-4
100-200	A	170	49	45	Y225M-2	50	Y250M-2	75	Y280S-2	85	12	5.5	Y132S-4	7.5	Y132M-4	11	Y160M-4
	B	160	43	37	Y200L2-2	45	Y225M-2			80	10.5						
	C	150	32	30	Y200L1-2	37	Y200L2-2	45	Y225M-2	75	8	4	Y112M-4	5.5	Y132S-4	7.5	Y132M-4
	D	130	24	18.5	Y160L-2	30	Y200L1-2	37	Y200L2-2	65	6	3	Y100L2-4	3	Y100L2-4	4	Y112M-4
100-250	A	230	77	75	Y280S-2	90	Y280M-2	132	Y315M1-2	115	19	11	Y160M-4	15	Y160L-4	18.5	Y180M-4
	B	220	70							110	17			11	Y160M-4	15	Y160L-4
	C	190	55	45	Y225M-2	75	Y280S-4	90	Y280M-2	100	13	7.5	Y132M-4			11	Y160M-4
	D	170	44	37	Y200L2-2	45	Y225M-2	75	Y280S-2	90	10	5.5	Y132S-4	7.5	Y132M-4	7.5	Y132M-4
100-315	A	250	125	132	Y315M1-2	185		250		125	31	18.5	Y180M-4	30	Y200L-4	37	Y225S-4
	B	235	117	132	Y315M1-2	160	Y315M2-2	220		120	29			22	Y180L-4	30	Y200L-4
	C	200	95	90	Y280M-2	132	Y315M1-2	160	Y315M2-2	105	23	15	Y160L-4	18.5	Y180M-4	22	Y180L-4
	D	165	70	75	Y280S-2	75	Y280S-2	110	Y315S-2	85	16	11	Y160M-4	11	Y160M-4	15	Y160L-4
100-400	A	280	190	250		315		450		145	49	37	Y225S-4	45	Y225M-4	75	Y280S-4
	B	260	170	200		280		355		135	47	37	Y225S-4			55	Y250M-4
	C	240	150	160	Y315M2-2	220		315		120	36	22	Y180L-4	30	Y200L-4	45	Y225M-4
	D	215	130	132	Y315M1-2	185		250		100	29	15	Y160L-4	22	Y180L-4	30	Y200L-4
	E	205	110	110	Y315S-2	160	Y315M2-2	200									
100-450	A	330	258	380		560		710		167	64	55	Y250M-4	75	Y280S-4	110	Y315S-4
	B	310	242	350		500		630		155	60	45	Y225M-4	75	Y280S-4	90	Y280M-4
	C	260	200	250		315		450		132	50	37	Y225S-4	45	Y225M-4	75	Y280S-4
	D	200	145	132	Y315M-2	185		250		102	37	22	Y180L-4	30	Y200L-4	37	Y225S-4
	A									175	76	75	Y280S-4	90	Y280M-4	132	Y315M1-4

100-500	B									165	72	75	Y280S-4	90	Y280M-4	110	Y315S-4	
	C									150	54	45	Y225M-4	75	Y280S-4	90	Y280M-4	
	D									125	42	30	Y200L-4	45	Y225M-4	55	Y250M-4	

Pumps & Systems

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SOBG Table of standard performance

Type	SY.	Q m³/h	H m	Speed 2950r/min						Q m³/h	H m	Speed 1475r/min					
				Proportion1.0		Proportion1.35		Proportion1.84				Proportion1.0		Proportion1.35		Proportion1.84	
				Power and Type								Power and Type					
150-200	A	300	45	55	Y250M-2	75	Y280S-2	110	Y315S-2	150	11.5	7.5	Y132M-4	11	Y160M-4	15	Y160L-4
	B	280	40	45	Y225M-2			90	Y280M-2	140	9.5						
	C	260	30	37	Y200L2-2	45	Y225M-2	75	Y280S-2	130	7.5	5.5	Y132S-4	7.5	Y132M-4	11	Y160M-4
	D	200	24	22	Y180M-2	30	Y200L1-2	45	Y225M-2	115	5	3	Y100L2-4	4	Y112M-4	5.5	Y132S-4
150-250	A	380	74	110	Y315S-2	160	Y315M2-2	200		190	18	15	Y160L-4	22	Y180L-4	30	Y200L-4
	B	350	60	90	Y280M-2	110	Y315S-2	160	Y315M2-2	180	15			18.5	Y180M-4	22	Y180L-4
	C	300	48	75	Y280S-2	90	Y280M-2	110	Y315S-2	150	12	11	Y160M-4	11	Y160M-4	15	Y160L-4
150-315	A	440	124	220		280		400		220	31	30	Y200L-4	45	Y225M-4	55	Y250M-4
	B	420	115	185		250		355		210	29			37	Y225S-4		
	C	380	90	160	Y315M2-2	185		250		190	22	22	Y180L-4	30	Y200L-4	37	Y225S-4
	D	340	65	90	Y280M-2	132	Y315M1-2	160	Y315M2-2	170	16	15	Y160L-4	18.5	Y180M-4	22	Y180L-4
150-400	A	500	190	380		560		710		160	50	55	Y250M-4	75	Y280S-4	110	Y314S-4
	B	480	170	355		450		630		150	46					90	Y280M-4
	C	460	148	280		400		500		220	38	37	Y225S-4	55	Y250M-4	75	Y280S-4
	D	420	130	220		315		400		190	28	30	Y200L-4	37	Y225S-4	55	Y250M-4
	E	400	110	185		250		355									
150-450	A	538	250	560		800		1120		270	64	75	Y250S-4	110	Y315S-4	160	Y315L1-4
	B	490	230	500		710		900		260	62	75	Y250S-4	110	Y315S-4	132	Y315M-4
	C	450	210	400		560		800		230	52	55	Y250M-4	75	Y280S-4	110	Y315S-4
	D	390	175	315		400		560		170	36	22	Y180L-4	37	Y225S-4	55	Y250M-4
	E	340	150	220		315		400									
150-500	A									300	75	110	Y315S-4	132	Y315M1-4	185	
	B									280	70	90	Y280M-4	132	Y315M1-4	160	Y315M2-4
	C									240	56	75	Y280S-4	90	Y280M-4	110	Y315S-4
	D									200	44	45	Y225M-4	75	Y280S-4	75	Y208S-4
150-560	A									300	97	160	Y315M2-4	185		250	
	B									290	91	132	Y315M1-4	160	Y315M2-4	220	
	C									260	70	90	Y280M-4	132	Y315M1-4	160	Y315M2-4
	D									220	54	75	Y280S-4	90	Y315S-4	110	Y315S-4
150-630	A									360	113	220		280		400	
	B									340	103	185		250		355	
	C									280	78	132	Y315M1-4	160	Y315M2-4	200	
	D									220	58	75	Y280S-4	110	Y315S-4	160	Y315M2-4
200-250	A	600	70	160	Y315M2-2	220		315		300	17.5	22	Y180L-4	30	Y200L-4	45	Y225M-4
	B	570	62	160	Y315M2-2	185		250		285	16	18.5	Y180M-4	30	Y200L-4	37	Y225S-4
	C	520	46	110	Y315S-2	132	Y315M1-2	185		250	12	15	Y160L-4	18.5	Y180M-4	30	Y200L-4
	D	460	32	75	Y280S-2	90	Y280M-2	110	Y315S-2	230	8	11	Y160M-4	15	Y160L-4	15	Y160L-4
200-315	A	650	122	315		400		560		330	30	45	Y225M-4	55	Y250M-4	75	Y280S-4
	B	630	114	280		355		500		320	28	37	Y225S-4	55	Y250M-4	75	Y280S-4
	C	580	88	200		250		355		300	22	30	Y200L-4	37	Y225S-4	55	Y250M-4
	D	500	65	132	Y315M1-2	180		220		260	15	18.5	Y180M-4	22	Y180L-4	30	Y200L-4
200-400	A	820	190	630		900		1120		420	50	90	Y280M-4	110	Y315S-4	160	Y315M2-4
	B	760	162	500		710		900		400	47	75	Y280S-4	110	Y315S-4	132	Y315M1-4
	C	720	145	450		560		1120		360	36	55	Y250M-4	75	Y280S-4	110	Y315S-4
	D	660	128	355		450		630		320	27	45	Y225M-4	55	Y250M-4	75	Y280S-4
	E	600	108	280		355		500									
200-450	A	940	255	1000		1400		1600		460	65	132	Y315M-4	185		250	
	B	880	240	900		1120		1800		442	62	110	Y315S-4	160	Y315L1-4	220	
	C	760	205	630		900		1600		382	48	75	Y280S-4	90	Y280M-4	160	Y315L1-4
	D	570	145	355		450		630		310	34	45	Y225M-4	75	Y280S-4	90	Y280M-4
200-500	A									500	80	160	Y315M2-4	220		315	
	B									480	75			200		315	
	C									440	68	132	Y315M1-4	160	Y315M2-4	220	

	D									420	57	110	Y315S-4	132	Y315M1-4	185		
	E									360	43	75	Y280S-4	110	Y315S-4	132	Y315M1-4	